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MANAGING ELK IN THE 1990'S AND BEYOND: RESULTS OF A SURVEY OF OPINIONS, ATTITUDES AND ACTIVITIES OF ALBERTA'S RESIDENT ELK HUNTERS

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by

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and

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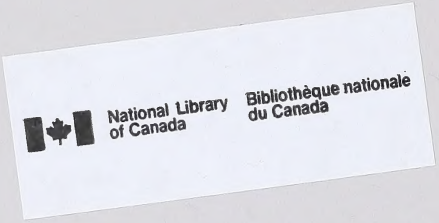
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PREFACE

This report includes summaries of the opinions held by resident elk hunters on various issues that concern elk hunting, as well as their preferences in elk hunting management. Presentation of these opinions and preferences in this report does not necessarily mean that either the authors agree, or that the Fish and Wildlife Division agrees with the views and preferences expressed by elk hunters.

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INTRODUCTION

Wildlife management agencies are, at times, hampered by the lack of public involvement in formulating management objectives. Large-scale consultation with publics about elk management in Alberta has been essentially lacking. Until now, only one large-scale study of big game hunters had been completed in Alberta; that study (Adamowicz 1983) concentrated on economic research and, furthermore, is now quite dated (1981 survey).

In recent years, elk management in Alberta has become relatively complex and potentially controversial. Elk numbers have declined, provincially, in the past several decades, yet the relatively demand for elk hunting licences has remained high. Despite the obvious challenges facing elk managers, a systematic assessment of the opinions, expectations and preferences of elk hunters had not been undertaken.

Accordingly, in the spring of 1992, the Alberta Fish and Wildlife Division conducted a large-scale questionnaire survey of elk hunters who reside in the province. Objectives of the survey were essentially four-fold:

1. To obtain information on activities of elk hunters, and approaches to elk hunting;
2. To assess satisfaction levels of elk hunters;
3. To measure opinions of elk hunters on issues such as poaching, and elk population trends;
4. To assess preferences of elk hunters for various means of managing elk harvests.

This report summarizes the results of the elk hunter survey.

METHODS

A 38-item questionnaire (Appendix) was mailed to 502 elk hunters on 12 May 1992. The sample size of hunters was chosen to ensure a margin-of-error of ± 5%, 19 out of 20 times, when dealing with a worst-case survey situation (divided 50% in favour of and 50% against) in a target population the size of the elk hunter population in Alberta. The sample of resident hunters was drawn (simple random sampling) from holders of 1991 wildlife certificates who were recorded as having purchased any of the following 7 types of elk hunting licences available to residents: antlerless elk special authorization (n = 29)[1], special elk draw in Wildlife Management Unit (WMU) 936 (n = 2), Cypress Hills elk draw (n = 10), elk draw in WMU 300 (n = 4), general elk licence (n = 443), antlered elk special authorization (n = 11), and special draw in WMU 104 (n = 3).

The sample of elk hunters included individuals who purchased an elk licence but did not actually hunt elk. Up to 2 follow-up mailings (May 19, June 2) were made to nonrespondents. Otherwise, Dillman's (1978) methods were employed.

Data analyses were performed using StatPac Gold software and an Olivetti M300 Personal Computer.

RESULTS

Response Rate

Questionnaires were returned by 430 people, yielding a response rate of 90% after exclusion of nondeliverables (n = 23)[2] and nonusables (n = 1). One questionnaire was received too late for the answers to be included in the analyses for this report.

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[1]Number of hunters selected for licence type is shown in parentheses.

[2]Sample size shown in parentheses (i.e., 23 undeliverables).

Sex, Age and Experience of Elk Hunters, and Participation in Elk Hunting

Of the survey respondents who indicated their sex (n = 423), 98% were male. Respondents reportedly ranged in age from 14 to 81; the median and mean ages were 38.5 and 40.4 years, respectively. For 403 respondents, the number of years of experience hunting elk (Alberta and elsewhere combined) ranged from 1 to 50 and averaged 11.5 years (median = 9). Most respondents who had started hunting elk at least 5 years ago (n = 342) hunted elk quite regularly; in fact, 57% (195 respondents) reported having hunted elk every year of the last 5. Of the remainder, 42 (12%), 57(17%), 27(8%) and 21(6%) had hunted 4, 3, 2 and 1 years, respectively, out of the last 5. The average number of years that respondents reported hunting elk in the 5-year period was 4.1 (median = 5 years).

Approaches to Elk Hunting

Use of Guide/Outfitter.--Of 416 respondents, only 3 reported having hired a guide or outfitter for hunting elk in Alberta in 1991.

Weapons used.--Complete or partial answers to the question on relative use of weapons (n = 416) indicated that two-thirds (277 hunters) hunted exclusively with rifles. However, the actual proportion of rifle hunters was probably higher than that; when answering this question, some respondents appeared to confuse the relative frequency of hunting with the relative frequency of using the various weapons while hunting (to illustrate, some respondents checked "occasionally used" in the row for rifle, but failed to insert checks in any of the other rows). Of the remaining use categories, "quite often", "occasionally", and "never" were checked 80(19%), 39(9%) and 20(5%) times, in respect to rifles.

Shotguns received little use by elk hunters. The "never used",

"occasionally", and "quite often" categories were selected 216, 14 and 3 times, respectively ("always" was not selected by any respondents).

Muzzle loaders received even less use by elk hunters than shotguns did. Of 235 respondents to this item, 227 (97%) selected the "never used" category, whereas "occasionally used" and "used quite often" were selected 5 and 3 times, respectively ("always" was not selected by any respondents).

Among 283 respondents who indicated their relative use of bow and arrows for elk hunting, the "never", "occasionally", "quite often" and "always" categories were picked 167 (59%), 45 (16%), 42(15%) and 29 (10%) times, respectively.

For future surveys, the question on relative use of weapons requires both simplification in its construction and clarification of meaning to respondents.

Primary Means of Travel in Hunting Area.--Of 384 usable responses to this question, travel on foot predominated (n = 234, 61%), followed by off-highway vehicle and horse (n = 44 for each, 11.5%), 4-wheel drive (n = 39, 10%), 2-wheel drive (n = 18, 5%), other (n = 3, 1%) and canoe/boat (n = 2, 1%).

Use and Importance of Off-highway Vehicles for Elk Hunting.--Of 425 respondents, most (59%) indicated that they had not used off-highway vehicles (OHVs) for elk hunts in the past 5 years. Of the 172 responses to relative use of OHVs for elk hunting, a plurality (41%) indicated that OHVs were used for very few of their elk hunts; the remaining 3 use categories each received 34 responses (20% each).

Of the 6 hunting activities recognized on the questionnaire in respect to use of OHVs, OHVs were most often regarded as either very important or essential for hauling out carcasses (88% of 173 respondents), followed by "to move hunting camp away from roads" (66% of 170 respondents), "to get back away from other hunters "(64% of 171 respondents), "to look for new hunting areas" (61% of 171),

"to scout hunting area before hunting" (49% of 169), and "to search for animals or sign" (36% of 172). Mean and median values of importance scores showed this same ordering of hunting activities with respect to use of OHVs (Table 1).

Solitary vs. Group Hunting.--Of 426 respondents, 79% indicated that they hunted with others either some or all of the time; 21% hunted alone for elk at all times.

Motives, Importance of Elk Hunting

The distribution of responses to the importance of various motives for elk hunting indicates that nature appreciation ("to get outdoors to enjoy nature") is singularly dominant, whereas using hunting equipment is least important (Table 2). Other appreciative motives (Decker and Connelly 1989) for hunting, such as enjoying solitude, relieving stress, practicing hunting skills, were quite important, as were physical exercise, companionship, the challenge of out-smarting a game animal, practicing outdoor skills, and putting meat in the freezer. Median and mean importance scores generally showed this same ordering of motives for hunting elk; least important were the satisfaction of killing an animal, obtaining a trophy animal, and using hunting equipment such as off-highway vehicles (Table 3).

Elk hunting was quite important to most respondents. Of 415 respondents, 58% indicated that they would miss it quite a lot (if they could not go hunting next year, or if the season closed), whereas 24% indicated that they would miss it more than any other activity or interest. Of the remainder, 13 and 63 respondents (3% and 15%) indicated that they would not miss elk hunting at all or would miss it a little, respectively.

Hunter Satisfaction Levels and Determinants of Satisfaction

This section summarizes the various measures of elk hunter satisfaction. It also presents the findings on a number of items or factors which are either

Table 1. The relative importance[a] of off-highway vehicles for various activities associated with elk hunting during the last 5 years, as perceived by survey respondents who had used off-highway vehicles for elk hunts during that period.

Activity	Sample size	Median score	Mean score	95% Confidence interval for mean
To haul out carcasses	173	4	3.3[b]	3.20 - 3.45
To move hunting camp	170	3	2.8	2.66 - 2.98
To look for new hunting areas	171	3	2.7	2.55 - 2.84
To get back away from others	171	3	2.7	2.51 - 2.82
To scout hunting area	169	2	2.5	2.32 - 2.62
To search for animals	172	2	2.2[c]	2.11 - 2.38

[a] 1 = not at all important, 4 = couldn't do without it.

[b] Mean score is significantly greater ($P < 0.05$) than for all other activities, as determined by 95% confidence intervals.

[c] Mean score is significantly ($P < 0.05$) lower than for the other 5 activities listed on the table, as determined by 95% confidence intervals.

Table 2. Percent of respondents to question on motives for hunting elk who assessed each motive as not at all important, slightly, quite, and very important, respectively.

Motive for hunting	% respondents in importance category			
	Not at all important	Slightly important	Quite important	Very important
To get outdoors to enjoy nature	1	4	26	70
To put meat in the freezer	10	35	27	27
For physical exercise	8	22	41	29
To enjoy solitude	7	16	36	42
To escape everyday routines, release stress	7	14	32	47
For the satisfaction of bagging an animal	29	41	19	11
For companionship of friends or family members	11	20	38	31
To practice outdoor skills (i.e., camping)	16	27	33	23
For the challenge of outsmarting a game animal	15	23	31	30
To obtain a trophy animal	42	29	18	11
To use my hunting equipment (e.g., off-highway vehicle)	56	26	12	7
To practice hunting skills (e.g., tracking, stalking)	9	20	36	36

Table 3. The relative importance[a] of various motives for hunting elk as perceived by the hunters themselves.

Motive for hunting	Sample size	Median score	Mean score	95% Confidence interval for mean
To get outdoors to enjoy nature	408	4	3.6	3.58 - 3.70
To escape routines, relieve stress	403	3	3.2	3.11 - 3.29
To enjoy solitude	402	3	3.1	3.03 - 3.21
To practice hunting skills (e.g., tracking, stalking)	405	3	3.0	2.89 - 3.08
For companionship of hunting partners	408	3	2.9	2.80 - 2.98
For physical exercise	402	3	2.9	2.83 - 3.01
For challenge of outsmarting animal	403	3	2.8	2.66 - 2.87
To put meat in freezer	412	3	2.7	2.62 - 2.81
To practice outdoor skills (e.g., camping)	406	3	2.6	2.55 - 2.75
For satisfaction of killing an animal	404	2	2.1	2.01 - 2.20
To obtain trophy animal	404	1	2.0	1.88 - 2.07
To use hunting equipment (e.g., off-highway vehicle)	401	1	1.7	1.60 - 1.78

[a] 1 = not at all important, 4 = very important.

known or surmised to affect hunter satisfaction. Findings on the determinants of elk hunter satisfaction are preliminary; some analyses are incomplete at this time.

Longer-term satisfaction.--Of 415 respondents, a large majority were either satisfied (very = 15%, slightly = 27%) or neither satisfied nor dissatisfied (34%). Comparatively few hunters were dissatisfied (very = 42 hunters or 10%, slightly = 54 or 13%) with their elk hunting experiences in Alberta during the years 1987-1991. The median and mean scores for overall satisfaction were 3 and 3.3, respectively.

Longer-term Success.--Hunting success over the past 5 years ranged from 0 to 80% (i.e., an elk killed in 4 of the last 5 years). Of 303 respondents, 2 killed elk in 4/5 years, 13 in 3/5, 38 in 2/5, 92 in 1/5, and 158 in 0/5 years. The median and mean numbers of years in which elk were successfully killed by respondents were 0 and 0.8 years, respectively.

Long-term success was related to long-term satisfaction (Chi-square = 41.33, 16 d.f., $P = 0.0005$). To illustrate, both respondents who killed elk in 4/5 years were satisfied (very in both cases), as were 9 of 13 respondents (2 = very, 7 = slightly) who bagged elk in 3/5 years. At the other end of the spectrum, only 54 of 155 respondents who failed to kill elk in each of 5 years were satisfied (16 = very, 38 = slightly), as were 39 of 91 who killed an elk only once in 5 years (15 = very, 24 = slightly).

Satisfaction in 1991.--Of 416 respondents, a sizable majority were either satisfied (very = 19%, slightly = 26%) or neither satisfied nor dissatisfied (27%). About 1/4 of the hunters were dissatisfied (very = 12%, slightly = 15%). The median and mean scores on the satisfaction scale were 3 and 3.3, respectively.

Of 424 respondents, most either agreed (strongly = 22%, slightly = 18%) or

were indifferent (29%) to the statement that their elk hunting was well worth the money spent on it. Nevertheless, nearly 1/3 of respondents apparently regarded their elk hunting as not worth the money spent (strongly so = 17%, slightly = 14%). The median and mean answer scores were 3 and 3.1, respectively.

A large majority of 423 respondents evidently perceived their elk hunting in Alberta in 1991 as having been as enjoyable as expected. Only 24% of respondents agreed with the statement that their elk hunting was not as enjoyable as expected (strongly agreed = 11%, slightly agreed = 13%), whereas 23% were neutral or indifferent, and 52% disagreed (strongly = 26%, slightly = 27%). The median and mean answer scores for this question were 2 and 2.6, respectively.

Observations of Elk while Hunting.--Of 426 respondents, 88% reported observing elk while hunting; 93 respondents reported seeing 1-5 elk, 110 reported 6-15, 46 reported 16-25, and 127 hunters observed 26 or more elk. Numbers of elk observed while hunting was significantly related to hunter satisfaction in 1991 (Chi-square = 53.97, 16 d.f., P = 0.000). To illustrate, of 81 respondents who were very satisfied, a large majority (81%) indicated that they had observed larger numbers of elk while hunting (26 = 6-15 elk, 7 = 16-25, 33= 26+), contrasted to a minority of respondents (21 of 51) who were very dissatisfied (of the 21, 8 observed 6-15 elk, 4 observed 16-25, and 10 respondents observed 26 or more).

Numbers of Elk Fired Upon.--Of 426 respondents, 78% did not fire at any elk, 18% fired at one, 3% (14 hunters) fired at two, and 1% (3 hunters) fired at three animals. The number of elk fired upon was correlated with hunter satisfaction during 1991 (r = 0.3314, 414 d.f., P = 0.000).

Successful Kills of Elk.--Of 427 respondents, 14% reported personally

bagging an elk in 1991. This figure differs appreciably from the 11% success estimated for all licenced elk hunters in Alberta, as determined by the annual harvest survey (Wildlife Branch 1992), but is very similar to the success of 13% estimated for participating hunters (i.e., hunters who actively hunted in 1991). Perhaps inactive hunters were somewhat less inclined to respond to our questionnaire, in the present study.

Individual hunter success was a significant determinant of relative satisfaction (Chi-square = 59.67, 4 d.f., P = 0.000). To illustrate, of 355 respondents who did not kill an elk personally in 1991, 111 were dissatisfied (50 = very, 61 = slightly), whereas only 4 of 61 respondents who did kill an elk indicated dissatisfaction (1 = very, 4 = slightly dissatisfied).

Of 328 respondents who hunted with other persons at least some of the time in 1991, only 20% reported that someone in their company successfully killed an elk. Whether or not hunting companions successfully killed an elk was significantly related to hunter satisfaction (Chi-square = 16.82, 4 d.f., P = 0.002). To illustrate, only 10 of 65 respondents with successful hunting companions were dissatisfied in 1991 (1 = very, 9 = slightly), in contrast to 72 of 255 respondents whose companions did not kill an elk (32 = very dissatisfied, 40 = slightly).

Frequency of Encountering Other Elk Hunters.--It seems that the vast majority of elk hunter did not feel crowded while hunting elk in 1991. Of 413 respondents, only 22% agreed (13% or 52 = slightly agreed, 10% or 40 = strongly agreed) with the statement that they encountered too many other hunters (40% undecided or neutral, 37% disagreed). The median and mean scores on the 5-point Likert scale were 3 and 2.8, respectively.

Whether or not elk hunters felt they encountered too many other hunters was weakly correlated with hunter satisfaction (r = -0.1586, 411 d.f., P = 0.0014).

Perceptions of Elk Population Trends.--A plurality (38%) of respondents (n = 421) perceived that elk numbers had declined in recent years in the areas where they hunt (stayed same = 28%, increased = 18%, don't know = 16%). Native hunting was the specific factor most often regarded by respondents as very important in causing elk population declines locally; 54% of 149 respondents regarded native hunting as very important in that regard (Table 4). Other specific factors which were commonly perceived as very important in causing elk population declines were habitat loss or change (39%), poaching (33%), and excessive recreational hunting (29%). This same ordering of factors was reflected in median and mean scores of importance in causing elk declines (Table 5).

The majority (78%) of 421 respondents either agreed (slightly = 21%, strongly = 25%) or neither agreed nor disagreed (32%) that there was a shortage of bull elk in their hunting area(s). The median and mean scores were 3 and 3.4, respectively.

Non-compliance with Hunting Regulations.--Of 424 respondents, 81% indicated that they did not "have direct personal knowledge of illegal hunting acts...in Alberta during 1991", whereas 19%(n = 81) did have such knowledge. Of the latter group (79 respondents), 49% indicated that they had participated in the "Report-a-poacher" program in 1991.

A majority (77%) of 420 respondents either agreed (slightly = 19%, strongly = 24%) or were neutral (34%) to the statement that "illegal elk killing commonly occurs in Alberta". The median and mean scores were 3 and 3.4, respectively. Another study of big game hunters (Hammitt et al. 199) has shown that conduct of other hunters affects satisfaction of individual hunters, but that relationship has not been examined in the present study, as yet.

Table 4. Percent of respondents who assessed various factors as being not at all important, slightly, quite, and very important in causing elk population declines in their hunting areas (n = 162 respondents).

Reason for decline	% respondents in category			
	Not At all important	Slightly important	Quite important	Very important
Habitat loss or change	12	29	20	39
Native (subsistence) hunting	7	14	24	54
Excessive recreational hunting	11	31	29	29
Predators	40	37	15	8
Disease/parasites	41	46	8	5
Severe winters	55	32	8	5
Poaching	12	29	26	33
First Other	2	4	21	74
Second Other	0	6	11	83

Table 5. The relative importance[a] of various factors in causing elk population declines locally, as perceived by elk hunter respondents.

Reason for decline	Sample size	Median score	Mean score	95% Confidence interval for mean
Native hunting	149	4	3.3[b]	3.10 - 3.41
Habitat loss/change	147	3	2.9	2.68 - 3.03
Poaching	139	3	2.8	2.62 - 2.97
Excessive recreational hunting	138	3	2.8	2.60 - 2.93
Predators	136	2	1.9	1.76 - 2.07
Disease/parasites	131	2	1.8	1.63 - 1.91
Severe winters	132	1	1.6	1.48 - 1.76
First Other	57	4	3.7	3.50 - 3.83
Second Other	18	4	3.8	3.52 - 4.03

[a] 1 = not at all important, 4 = very important.

[b] Mean score is significantly greater ($P < 0.05$) than for all other factors, as indicated by 95% confidence intervals.

Preferences in Hunting Management

Of 413 respondents, slightly more than half (52%) preferred higher-quality hunts with high success, but reduced hunting opportunity. However, considering the margin-of-error adopted for the study, respondents must be regarded as split 50:50 on this question (question 27, see Appendix).

A large majority (79%) of 426 respondents approved of antler-size limits. Those who approved of antler-size limits (n = 323) typically approved (72%) of 3 points per side as a minimum size (22% selected 5 points, 6% selected 6 points).

Respondents were split essentially 50:50 on the question of wanting opportunities for actual trophy elk; 220 respondents (52.5%) did not want trophy elk areas, whereas 199 (47.5%) wanted such areas. Among those who wanted trophy areas and specified a harvest proportion that should be allotted to trophy bull production (n = 193), 48% chose the answer category of 10% or less, 39% chose 11-25%, 9% chose 26-50%, and 3% specified other levels.

Of 426 respondents, a slight plurality (29%) indicated that hunting during the rut was not important at all. However, respondents were quite evenly divided among the 4 answer categories, and half of them regarded hunting during the rut as either quite or very important (27 and 23%, respectively). Among the latter respondents, the option of minimum-size restriction was more highly preferred than the option of bow-hunting or limited-entry draws as a means for controlling harvest while allowing hunting during the rut. Of 186 respondents, 85% listed this measure as most or second-most preferred, and its mean score indicated significant ($P < 0.05$) preference, as well (Table 6).

Half of 416 respondents disagreed with the idea of party hunting for elk (strongly disagreed = 37%, slightly = 13%); the neutral category was quite substantial in size (19%), while 31% of respondents agreed (12% slightly, 19% strongly). The median and mean scores were 2 and 2.6, respectively.

Table 6. The relative preference[a] of elk hunters who wish to hunt during the rut for various means of controlling bull harvests.

Harvest control measure	% respondents regarding measure as				
	Most preferred	Second-most preferred	Least preferred	Median score	Mean score
Minimum size restriction (186)[a]	45	40	15	2	1.7[b,c]
Bow-hunting only (168)	44	16	40	2	2.0
Limited-entry draw (165)	27	35	38	2	2.1

[a]Number of respondents in parentheses.

[b]1 = most preferred, 3 = least preferred.

[c]Minimum size restriction was significantly ($P < 0.05$) more preferred than other 2 options, as determined by 95% confidence intervals of the mean scores.

Other Suggestions and Comments

Of 429 respondents, nearly two-thirds (66%) provided additional suggestions for improving elk hunts in the future. Suggestions ranged from simple (1 suggestion only), short and succinct (1-2 lines), to complex, lengthy (up to 2 pages) and compound...as many as 9 identifiable suggestions were made by an individual respondent. Comments/suggestions have not been categorized and tallied, as yet. Nevertheless, native hunting and game farming/ranching appeared to be featured prominently in these remarks.

DISCUSSION AND CONCLUSIONS

Elk hunters in Alberta are almost exclusively male (98%), largely middle-aged, have quite extensive experience at hunting elk, and have hunted elk quite regularly (57% hunted elk every year in the past 5 years).

Resident elk hunters very rarely hired a guide or outfitter for elk hunting (only 3 of 416 did so in 1991), relied heavily on rifles for hunting, and predominantly travelled on foot, and by horse and off-highway vehicle (OHV), while in their hunting areas. Most (59%) had not used OHVs for elk hunts in the past 5 years. Even elk hunters who reported using OHVs in the 5-year period generally reported using them relatively infrequently. Among elk hunters who used OHVs, OHVs were regarded as most important for hauling out carcasses, moving hunting camps away from roads, looking for new hunting areas, and getting back away from other hunters. Elk hunting was a group initiative for most respondents; yet, 21% reported being alone at all times while hunting elk in 1991.

Elk hunting was either quite important or singularly important to most respondents. The hunting motive, "to get outdoors to enjoy nature", was very dominant among elk hunters. Other appreciative motives were of intermediate

importance, as were physical exercise, companionship, the challenge of out-smarting a game animal, practicing outdoor skills, and putting meat in the freezer.

Both longer-term (1987-1991) and current (1991) measures of satisfaction levels indicated that about three-quarters of elk hunters were either satisfied or neither satisfied nor dissatisfied; relatively few respondents expressed dissatisfaction with their elk hunting experiences. Satisfaction of respondents was related to success in killing elk ($P = 0.0005$), whether or not hunting companions were successful ($P = 0.002$), numbers of elk observed while hunting ($P = 0.000$), and whether or not hunters perceived themselves as encountering too many other hunters while hunting elk ($P < 0.001$). A very high proportion (88%) of respondents reported that they had observed elk while hunting, although most (78%) did not fire upon elk.

A plurality (38%) of respondents perceived that elk numbers had declined in recent years in the areas where they hunt; most hunters (54%) who perceived elk numbers to have declined importantly attributed causation to native hunting; other factors commonly considered to be very important in that context were habitat loss/change (39%), poaching (33%), and excessive recreational hunting (29%). Most respondents (78%) either agreed (46%) or neither agreed nor disagreed that there was a shortage of bull elk in their hunting area. Yet, the vast majority of elk hunters evidently did not feel crowded by other hunters while hunting elk in 1991.

A majority of respondents either agreed (43%) or neither agreed nor disagreed (34%) with the statement that "illegal elk killing commonly occurs in Alberta". Further, 19% ($n = 81$) of respondents indicated that they had direct personal knowledge of illegal hunting acts occurring in Alberta during 1991; of the latter respondents, nearly half indicated that they had participated in the

"Report-a-poacher" program during 1991.

With respect to preferences in hunting management, respondents were split essentially 50:50 on choosing high-quality hunts (but reduced participant numbers) and low-quality hunts (maximum participation). A large majority of respondents approved of (minimum) antler-size limits; a minimum of 3 points per antler was accepted by most (72%) respondents. Elk hunters were also split essentially 50:50 on the question of opportunities for very large ("trophy") bulls. Of those who wanted a portion of the provincial herd set aside for production of trophy bulls, about half stipulated setting aside 10% or less of the herd for that purpose. Respondents were also split evenly on the importance of hunting during the rut: half regarded hunting during that time as either quite (27%) or very important (23%). For those who perceived rut hunting as either quite or very important, the option of minimum-size restrictions was the most preferred for ensuring harvest control during the rut. Half of the respondents disagreed with the idea of party hunting for elk; the neutral contingent was moderate in size (19%), while 31% of respondents agreed with that approach.

Elk hunters in Alberta seem to be quite polarized in respect to preferences in hunting management. It would seem, therefore, that the most prudent course for improving satisfaction levels of elk hunters provincially would be through provision of a variety of well-considered and appropriate regimens for elk hunting. However, extensive consultation, both locally and provincially, will be required, prior to large-scale changes in regimens for elk hunting.

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Appendix: A copy of the questionnaire mailed to elk hunters in May 1992.

ALBERTA FORESTRY, LANDS
AND WILDLIFE
FISH AND WILDLIFE DIVISION

MANAGING ELK IN THE 1990'S AND BEYOND: A SURVEY OF OPINIONS, ATTITUDES AND ACTIVITIES OF ALBERTA'S RESIDENT ELK HUNTERS

To the Respondent:

Thank you for answering these questions about hunting elk in Alberta. The information provided by you and other elk hunters will be used to improve the management of elk populations, now and in the future. Please answer all of the questions which apply to you. Most questions can be anwered by circling the number next to the answer you choose, or by writing in the blank space provided. If you have any questions, please call Arlen Todd in Edmonton (422-9537). You may call toll free by using the regional information telephone enquiries (RITE) system. Just call your operator and ask to be connected with the RITE operator.

All information which you provide in this questionnaire will be kept completely confidential. The questionnaire has an identification number on it, but that number is used only for mailing purposes. That number enables us to check your name off on the mailing list when your questionnaire is returned. Otherwise, your name will never be associated with the questionnaire itself.

Please return your completed questionnaire within the next few days in the postage paid envelope provided.

We appreciate your cooperation with this survey.

TO BEGIN, WE WANT TO KNOW WHY YOU HUNT ELK AND HOW IMPORTANT ELK HUNTING IS TO YOU.

1. There are a number of reasons why people hunt elk. Please consider the following list of reasons for hunting elk, and indicate how important each reason is to you personally (please circle one number for each reason).

Reason	Not At All Important	Slightly Important	Quite Important	Very Important
To get outdoors to enjoy nature	1	2	3	4
To put meat in the freezer	1	2	3	4
For physical exercise	1	2	3	4
To enjoy solitude	1	2	3	4
To escape everyday routines, release stress	1	2	3	4
For the satisfaction of bagging an animal	1	2	3	4
For companionship of friends or family members	1	2	3	4
To practice outdoor skills (i.e., camping)	1	2	3	4
For the challenge of out-smarting an animal	1	2	3	4
To obtain a trophy animal	1	2	3	4
To use my hunting equipment (e.g., off-highway vehicle)	1	2	3	4
To practice hunting skills (e.g., tracking, stalking)	1	2	3	4

2. If for some reason you could not go hunting elk next year, or if the season closed, how much would you miss it (please circle the number of your answer)?

    1 I WOULD NOT MISS IT AT ALL.
    2 I WOULD MISS IT A LITTLE.
    3 I WOULD MISS IT QUITE A LOT.
    4 I WOULD MISS IT MORE THAN ANY OTHER ACTIVITY OR INTEREST OF MINE.

NOW, WE WOULD LIKE TO ASK YOU A FEW QUESTIONS ABOUT YOUR ELK HUNTING ACTIVITIES IN ALBERTA DURING 1991.

3. While hunting elk in Alberta this past year, did you hire a guide or outfitter (circle number)?

    1 NO
    2 YES

4. Please indicate your primary means of travel in the hunting area(s) while you were hunting elk (circle one number only, please).

    1 TWO-WHEEL DRIVE HIGHWAY VEHICLE
    2 FOUR-WHEEL DRIVE HIGHWAY VEHICLE
    3 ON FOOT
    4 HORSE
    5 OFF-HIGHWAY VEHICLE
    6 CANOE OR BOAT
    7 OTHER (PLEASE SPECIFY) _____

5. Please indicate the weapons which you used for hunting elk in Alberta in 1991 and relatively how often you used each weapon type (please check one column for each weapon type).

	Relative amount of use			
Weapon Type	Never Used	Occasionally Used	Used Quite Often	Always Used
Rifle	___	___	___	___
Shotgun	___	___	___	___
Muzzle loader	___	___	___	___
Bow and arrow	___	___	___	___

NEXT, WE WANT YOUR OPINION ON ELK POPULATION TRENDS IN THE AREA(S) WHERE YOU HUNT.

6. In your opinion, in the area(s) where you hunt, have elk numbers in the last few years..... (please circle the number of your answer)

1 DECREASED?
2 STAYED THE SAME?
3 INCREASED?
4 DON'T KNOW.

If you think elk numbers have decreased, please answer question number 7; otherwise, skip to question number 8.

7. Since you think elk numbers have declined in your hunting area(s), please consider the list of possible reasons below and tell us how important you think each of the reasons has been in causing the elk decline (circle one number for each reason).

Reason For Decline	Not Important At All	Slightly Important	Quite Important	Very Important
Habitat loss or change	1	2	3	4
Native (subsistence) hunting	1	2	3	4
Excessive recreational hunting	1	2	3	4
Predators	1	2	3	4
Disease/parasites	1	2	3	4
Severe winters	1	2	3	4
Poaching	1	2	3	4
Other (specify)				
1. _____ _____	1	2	3	4
2. _____ _____	1	2	3	4

NEXT, WE WANT TO KNOW ABOUT YOUR ENCOUNTERS WITH OTHER ELK HUNTERS.

8. Please indicate the extent to which you disagree or agree with the following statement: During my elk hunting in Alberta in 1991, I encountered too many other elk hunters (please circle the number of your answer).

Strongly disagree				Strongly agree
1	2	3	4	5

9. Do you have direct personal knowledge of illegal hunting acts (such as hunting without licence, night hunting, hunting before or after the open season) in Alberta during 1991 (please circle number)?

    1 NO
    2 YES

    If no, please go to question 11.

10. Did you participate in the "Report-A-Poacher" program in 1991 by reporting one or more incidents of illegal hunting (please circle number)?

    1 NO
    2 YES

11. Please indicate the extent to which you disagree or agree with the following statement: Illegal elk killing commonly occurs in Alberta (circle number).

Strongly disagree				Strongly agree
1	2	3	4	5

NEXT, WE ARE INTERESTED IN SOME RESULTS OF YOUR ELK HUNTING, AND YOUR RELATIVE SATISFACTION.

12. While hunting elk in Alberta during 1991, the number of elk which you personally saw was.... (circle one answer only, please):

    0 1-5 6-15 16-25 26 or more

13. Did you personally kill an elk in Alberta during 1991 (please circle number of answer)?

    1 NO
    2 YES

14. The number of elk which you personally shot at while hunting elk in Alberta during 1991 was....(circle one answer only, please):

0 1 2 3 4 or more

15. Please indicate whether you always hunted elk by yourself during 1991 (in Alberta) or whether you hunted in the company of other elk hunters some or all of the time (circle number).

1 I hunted alone at all times
2 I hunted with other elk hunters some or all of the time

If you hunted alone at all times, please go to question 17.

16. Did any of the other persons that you hunted elk with in 1991 kill an elk while you were hunting with them (circle number of answer)?

1 NO
2 YES

17. Please indicate your relative satisfaction with your elk hunting experiences in Alberta in 1991 (circle number):

Very dissatisfied				Very satisfied
1	2	3	4	5

NEXT, PLEASE INDICATE THE EXTENT TO WHICH YOU DISAGREE OR AGREE WITH THE FOLLOWING TWO STATEMENTS.

18. My elk hunting in Alberta in 1991 was well worth all the money I spent (circle number).

Strongly disagree				Strongly agree
1	2	3	4	5

19. My elk hunting in Alberta in 1991 was <u>not</u> as enjoyable as I expected it to be (circle number).

Strongly disagree				Strongly agree
1	2	3	4	5

NOW WE WANT TO KNOW ABOUT YOUR LONGER-TERM EXPERIENCES WITH ELK HUNTING AND YOUR OVERALL SATISFACTION LEVELS.

20. How many years, in your lifetime, have you been licenced to hunt elk anywhere (Alberta and elsewhere combined)?

_____ YEARS

21. If you started hunting elk in Alberta 5 or more years ago, please give the number of years out of the last 5 (i.e., 1987-1991, inclusive) in which you held elk licences in Alberta.

_____ NUMBER OF YEARS

If you started hunting elk in Alberta more recently than 1987, please go to question 23.

22. Please indicate the number of years in the past 5 in which you have personally bagged an elk in Alberta.

_____ NUMBER OF YEARS

23. Please indicate your overall satisfaction with your elk hunting experiences in Alberta during the past 5 years (circle one only):

Very dissatisfied				Very Satisfied
1	2	3	4	5

NOW WE WANT TO KNOW ABOUT YOUR USE OF OFF-HIGHWAY VEHICLES FOR ELK HUNTING IN ALBERTA. FOR THESE QUESTIONS, AN OFF-HIGHWAY VEHICLE IS DEFINED AS ANY MOTORIZED VEHICLE WHICH IS NOT LICENCED FOR HIGHWAY USE, AND INCLUDES SNOWMOBILES AND OTHER TRACK VEHICLES, AND MULTI-WHEELED ALL-TERRAIN CYCLES, BUT DOES NOT INCLUDE MOTOR BOATS.

24. Have you used off-highway vehicles in your elk hunts in Alberta at any time in the past 5 years (please circle number of answer)?

1 NO
2 YES

If no, proceed to question number 27.

25. Please indicate, relatively, how many of your elk hunts in Alberta in the past 5 years involved the use of off-highway vehicles (circle number).

1 VERY FEW
2 QUITE A FEW
3 MOST OF THEM
4 ALL OF THEM

26. Please indicate the importance to you of off-highway vehicles for the following activities associated with elk hunting, over the last 5 years (circle one number for each activity).

Activity	Not at All Important	Somewhat Important	Very Important	Couldn't do without it
To move hunting camp away from roads	1	2	3	4
To search for animals or sign	1	2	3	4
To haul out carcasses or dressed game	1	2	3	4
To scout your hunting area before hunting	1	2	3	4
To look for new hunting areas	1	2	3	4
To get back away from other hunters	1	2	3	4

WILDLIFE AGENCIES HAVE VARIOUS WAYS OF CONTROLLING HARVESTS, SUCH AS SHORTENING SEASONS, RESTRICTING HUNTING DURING THE RUT, REQUIRING HUNTERS TO SHARE AN ELK, ANTLER-SIZE RESTRICTIONS FOR BULLS, AND SO ON. THE NEXT FEW QUESTIONS SEEK YOUR OPINIONS ON PREFERRED WAYS FOR CONTROLLING HARVESTS.

27. Methods of controlling bull elk harvests can be sorted into 2 general categories. One category, limited-entry draws, provides high hunter success and higher-quality hunts (hunters are less crowded), but overall hunting opportunity is reduced (many hunters are not drawn). The second category seeks to lower harvests by reducing hunter success, without reducing hunter numbers, so hunting opportunity is maximized. This category includes methods such as shortening seasons, antler-size restrictions, allowing only primitive weapons such as bows or muzzle loaders. Please indicate which of these 2 categories is <u>most</u> acceptable to you (check one only).

___ Higher-quality hunts with high success, but reduced hunting opportunity.

___ Lower-quality hunts with low success, but maximum opportunity to hunt.

28. Harvests of bull elk can be controlled by allowing only bulls of certain antler sizes to be taken (for example, hunters may take only 3-point or larger, or 6-point or larger bull elk in various parts of Alberta). Please indicate whether you generally disapprove or approve of minimum antler-size requirements for bull elk in Alberta (circle number).

1 I DO <u>NOT</u> APPROVE OF ANTLER-SIZE RESTRICTIONS.
2 I APPROVE OF ANTLER-SIZE RESTRICTIONS.

IF YOU DO <u>NOT</u> APPROVE OF ANTLER-SIZE RESTRICTIONS, PLEASE GO TO QUESTION NUMBER 30.

29. Since you approve of antler-size restrictions, please indicate what minimum antler size is most appropriate for bull elk in the area where you hunt (circle number of one answer only).

    1 MINIMUM OF 3 POINTS PER SIDE
    2 MINIMUM OF 5 POINTS PER SIDE
    3 MINIMUM OF 6 POINTS PER SIDE

30. Aside from minimum antler-size requirements, some elk hunters want the opportunity to get an actual trophy (an older bull with very large antlers). In our experience, a limited-entry draw is the only way to ensure availability of trophy bulls. Moreover, harvest levels of bulls must be decreased by about two-thirds in an area, to ensure that large, trophy bulls are available. Please indicate whether you would like to see an area set aside for trophy bulls or not (circle number).

    1 NO, I DON'T WANT A TROPHY AREA.
    2 YES, I WANT AN AREA FOR TROPHY BULLS.

IF YOU DO NOT WANT AN AREA FOR HUNTING TROPHY BULLS, PLEASE GO TO QUESTION NUMBER 32.

31. The harvest of bull elk in Alberta in recent years has averaged about 1400 annually. Please indicate the percentage of the annual harvest that you think should be from a trophy bull area (circle number of answer).

    1 TEN PERCENT OR LESS
    2 ELEVEN TO TWENTY-FIVE PERCENT
    3 TWENTY-SIX TO FIFTY PERCENT
    4 OTHER (PLEASE SPECIFY) _____

32. Some elk hunters like to hunt bull elk during the rut which occurs from early September to early October. Since bulls are very vulnerable during the rut, measures must be taken to guard against over-harvests (such as antler-size restrictions, bow-only hunting, limited-entry draws). Please indicate how important it is to you to hunt bull elk during the rut (circle number).

1 NOT IMPORTANT AT ALL
2 SLIGHTLY IMPORTANT
3 QUITE IMPORTANT
4 VERY IMPORTANT

If you indicated that hunting during the rut was either quite important or very important to you, please answer the following question. Otherwise, please go to question number 34.

33. Since you wish to hunt during the rut, please indicate which protective measures are most acceptable to you. Rank from most acceptable (1) to least acceptable (3).

Protective measures	Rank
Limited-entry draw	____
Minimum size restriction	____
Bow-hunting only	____

34. Please indicate the extent to which you disagree or agree with the following statement: There is a shortage of bull elk in the area in which I hunt.

Strongly disagree				Strongly agree
1	2	3	4	5

35. A system which requires elk hunters to be licenced to hunt in a group or party and share the animal killed is one way to reduce harvests, without reducing hunting opportunity. Please indicate the extent to which you would disapprove or approve of such a system for bull elk in Alberta (circle number of answer).

Strongly disapprove				Strongly approve
1	2	3	4	5

WE ARE NEARLY DONE NOW! THE NEXT TWO QUESTIONS WILL PROVIDE INFORMATION WHICH WILL HELP US INTERPRET YOUR QUESTIONNAIRE RESPONSES.

36. Please indicate your present age, in years (write in space provided).

_____ YEARS

37. Please indicate your sex (circle number).

1 MALE
2 FEMALE

38. Is there anything else you would like to tell us that might help improve your future hunts for elk in Alberta? If so, please use this space for that purpose.

THANK YOU. PLEASE RETURN YOUR COMPLETED QUESTIONNAIRE TODAY, USING THE RETURN ENVELOPE PROVIDED. In the event that the pre-addressed envelope has been lost, please mail the questionnaire to the following address:

Alberta Fish and Wildlife Division
Attention: Elk Hunter Survey
7th Floor
O.S. Longman Building
6909 - 116 Street
Edmonton, Alberta T6H 4P2

IF YOU WOULD LIKE TO RECEIVE A SUMMARY OF THE SURVEY RESULTS, PLEASE PRINT YOUR NAME AND MAILING ADDRESS ON THE BACK OF THE RETURN ENVELOPE (NOT ON THE QUESTIONNAIRE ITSELF). WE WILL SEE THAT YOU GET THE SUMMARY.

N.L.C./B.N.C.
3 3286 50150 7012